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## Introduction

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### 1. Introduction

A significant advance in cancer treatment was achieved in the mid-1990s with the introduction of solvent-based taxanes. However, first-generation taxanes required synthetic solvents to allow parenteral administration, which occasionally caused serious toxicities and compromised taxane treatment efficacy. These undesirable characteristics led to the development of second-generation taxanes, including a solvent-free albumin-bound form of paclitaxel (*nab*-paclitaxel). *Nab*-paclitaxel was approved by the US Food and Drug Administration (FDA) in 2005 for the treatment of metastatic breast cancer refractory to or relapsed following combination chemotherapy or relapsed within 6 months of adjuvant chemotherapy. Prior therapy should have included an anthracycline, unless contraindicated.

In the first of two companion articles in this supplement, Dr. Matti S. Aapro from Clinique De Genolier and Dr. Gunter von Minckwitz from the German Breast Group discuss the molecular basis for the activity of novel taxanes and early scientific data are presented that set the stage for discussion of the clinical development

of *nab*-paclitaxel. Data are presented on the toxicity and solubility issues of first-generation taxanes and the scientific basis for the improved efficacy and toxicity of *nab*-paclitaxel is discussed.

In the second article, a series of clinical trials with *nab*-paclitaxel are described in detail by Dr. William Gradishar from Northwestern University and Dr. Javier Cortes from Hospital Universitari Vall D'Hebron. The authors lay out the safety and efficacy data for *nab*-paclitaxel in breast cancer and describe the clinical evidence which justified FDA approval of this novel taxane. Drs. Gradishar and Cortes also highlight positive early clinical trial data that evaluate *nab*-paclitaxel in combination with other anticancer agents for the treatment of metastatic breast cancer; the efficacy of *nab*-paclitaxel in the neoadjuvant/adjuvant setting for early stage breast cancer is also discussed. Based on clinical data presented in this article, it appears that the utility of novel taxanes will not be confined to breast cancer, since trials in lung cancer, melanoma, ovarian cancer, prostate cancer, and pancreatic cancer using *nab*-paclitaxel have also shown promise.

### 2. Conflicts of Interest

Dr. Cortes has no financial relationships that could inappropriately influence his work. This supplement

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